GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

Contents for Week of November 11, 1935. Vol. XIV. No. 18.

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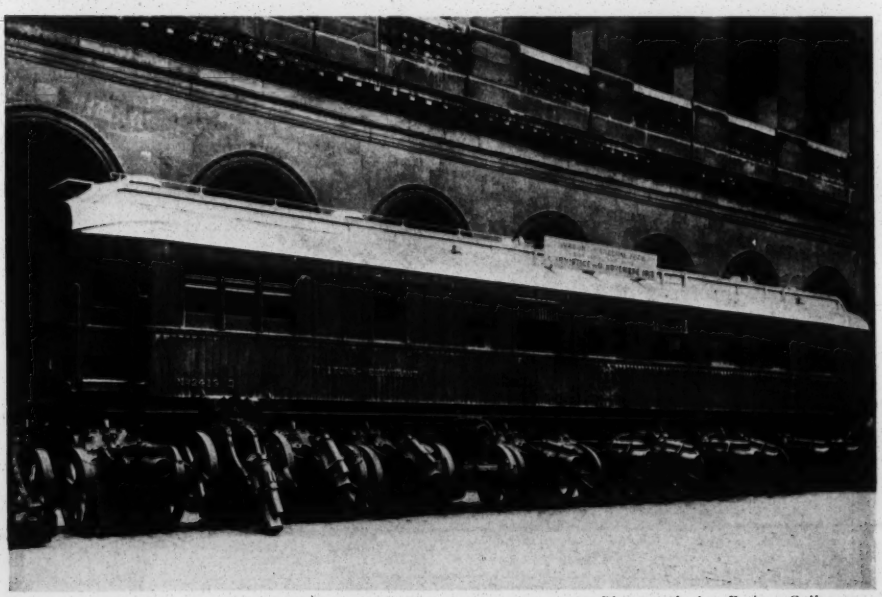

Photograph by Ewing Galloway

THE CAR WHOSE CARGO WAS PEACE

At 5 A.M. on Monday morning, November 11, 1918, this unadorned railroad car, on a siding in the quiet Forest of Compiègne, was the birthplace of the Armistice. Later it was preserved in the court of the Hôtel des Invalides, Paris, (See Bulletin No. 1). It is now permanently installed in the Forest of Compiègne.

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic News Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

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Compiègne Forest Saw the Armistice Signed

SEVENTEEN years ago, German delegates in a train with drawn blinds sped through November fog to an unknown destination in France for negotiations. Their train halted in a lonely wood beside another train housing Marshal Foch and his companions.

Early in the gray misty morning of November 11, 1918, the Armistice was signed near Rethondes station in the Forest of Compiègne, France. From there the order to "Cease Firing" was flashed to the front.

Armistice Signed in Railway Coach

While bugles sounded the news up and down the Allied fronts, and exuberant crowds in Allied cities rejoiced, soldiers in isolated dugouts who hadn't heard of the truce still stood watchfully with guns primed. Not until after a rain of star shells and colored lights had illumined the sky that night did they realize the truth and relax their vigilance. Soon German officers in automobiles bearing white flags approached to point out spots set with German mines and traps; and processions of prisoners, released by the Germans, were moving down war-scarred roads over ravaged countrysides to join happy-faced citizens in singing the Marseillaise and waving the tricolor.

The Forest of Compiègne, where the Armistice was signed, is considered one of the finest stretches of woodland in France. It lies 35 miles northeast of Paris. Its more than 35,000 acres stretch from the town of Compiègne southeast to Pierrefonds, and westward. Peace walks to-day in these sunlit woods of oak and beech, where silenced war drums have been supplanted by the drumming of birds in the underbrush. Villagers strolling among falling leaves over the forest's hundreds of roads and paths meet nothing more alarming than startled wild creatures. But the forest is not without reminders that it was the scene of one of the most momentous events in modern history. In a clearing, near a memorial to war dead, marble slabs between the railroad tracks commemorate the places where the two coaches stood. The coach in which the Armistice was signed is preserved in the court of the Hôtel des Invalides in Paris. Memory of the war is evoked again by the war memorial in the town of Compiègne, and two miles south of it, in the French National Cemetery at Royallieu.

Scene of Joan of Arc's Last Battle

Northwest of the forest, on a bank of the Oise River which skirts it, is the town of Compiègne. It had a population of over 17,000 in 1932 and is chiefly industrial, manufacturing boats, copperware, ironware, cordage, muslin, and hosiery.

Trumpet calls and rumbling war drums are familiar sounds to Compiègne. During the Hundred Years' War between France and England, Compiègne was besieged and captured several times. A bronze statue of Joan of Arc opposite the City Hall recalls that in defense of this city she rode to her last battle. Here she was captured May 23, 1430, by the Burgundians.

In 1930 Compiègne celebrated the 500th anniversary of the Maid's last day in the field. A service was held before the Joan of Arc memorial altar in the ancient church of St. Jacques, the same church in which Joan heard mass before riding out to battle, an eighteen-year-old girl in white armor and gold-embroidered scarlet

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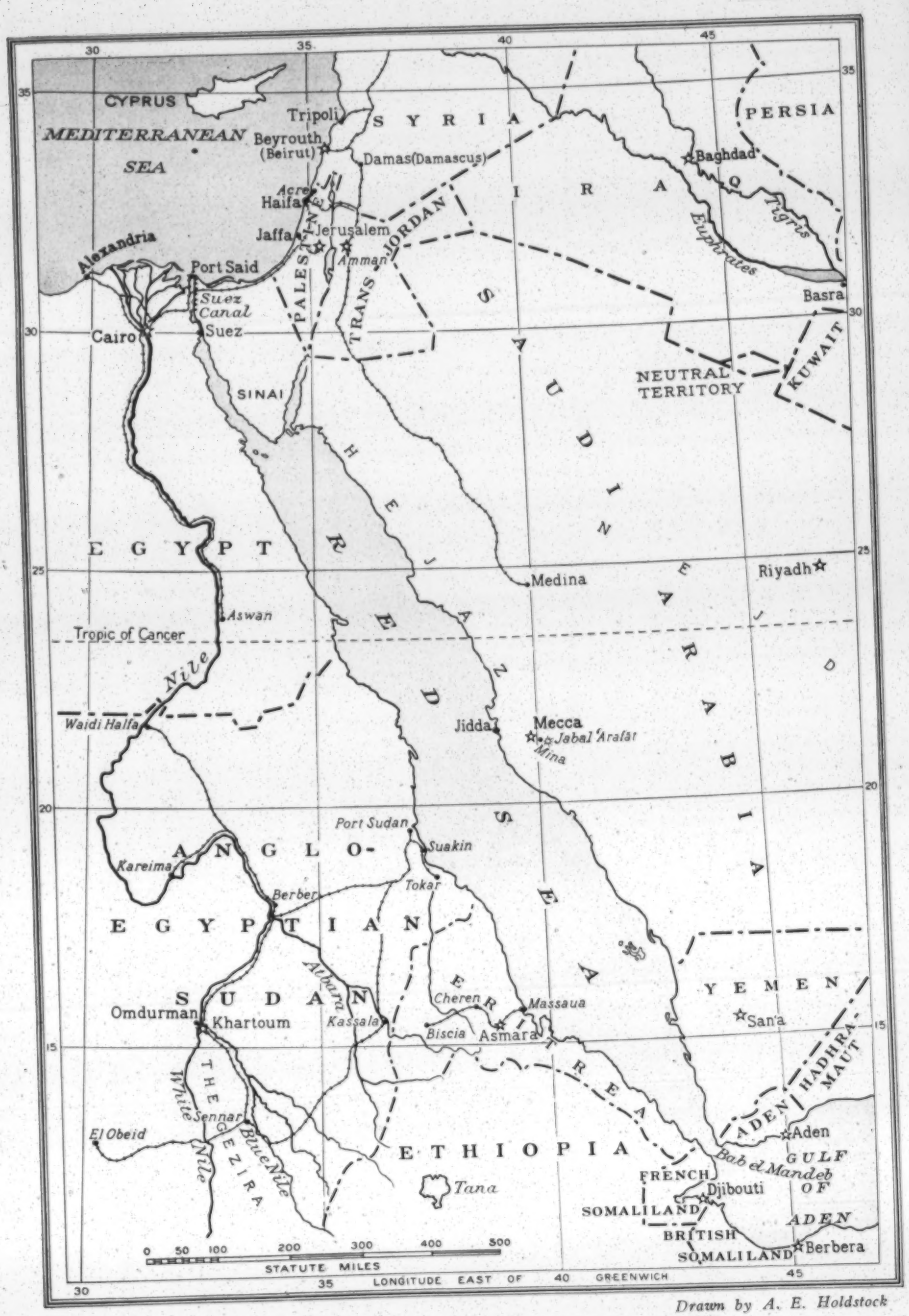

Drawn by A. E. Holdstock

THE RAILROAD THAT COULDN'T QUITE ARRIVE

The Hejaz Railway (indicated by the barbed line from Damascus to Medina) seems to stop exhausted by its arduous route through the Saudi Arabian desert. Its repair may make Mecca more accessible to all the territory on this map (See Bulletin No. 4).

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Ogaden, Where Ethiopia's "Stork Men" Lurk

A COUNTRY in which nature has built her own "barbed-wire entanglements" in the form of thorn-bush jungles, and where water holes sometimes are 50 miles apart, is Ethiopia's Ogaden Province, scene of Italy's push into the ancient empire from the south.

Fighting their way up through Ogaden, north and west from the Italian Somaliland border, in an effort to seize Ethiopia's only railroad, Italy's forces must traverse one of the least explored regions of Ethiopia. They may be the first white men ever seen by some of the remoter tribes in this area. Some Italian patrol may be startled to encounter the "stork-people" somewhere in the Ogaden jungle—people so named by a jesting explorer because they like to stand on one leg instead of two. They curl up the idle leg much as does a stork, resting the foot on the knee of the leg that is in use. Ogaden is inhabited by the Somali and Galla tribes, herdsmen and farmers respectively, living a primitive and precarious existence, most of them of Moslem faith.

River That Loses Itself

Ogaden is in Ethiopia's southeastern corner, jutting out into an angle formed by British Somaliland on the north and Italian Somaliland on the south and east. On the southwest it extends to the Webbe (river) Shibeli, which is on the Italians' left flank as they drive north toward Harar.

This strange river tumbles down from Ethiopia's high central mountains until it almost reaches the sea near Mogadiscio on the Indian Ocean, then changes its mind and runs for 170 miles along the coast only 12 to 15 miles inland, only to lose itself in the Italian Somaliland plains a few miles from the Equator.

From the Italian Somaliland border north through Ogaden to reach Diredawa and the Addis Ababa-Djibouti railroad, the Italians must travel 350 miles, half again as far as General Sherman's famous march from Atlanta to the sea, and about the same distance as from New York to Richmond, Virginia.

Semi-Desert Along Border

On the Italians' right as they move north is the vast dry plateau of the Haud country, which stretches along the frontier between Ethiopia and British Somaliland. At times its undulating surface is broken up by shallow stream courses, but in the dry season the Haud Plateau is virtually waterless.

Over much of it grows a thick thorn jungle which is sometimes impenetrable. In the southeast the Haud is a semi-desert. In other parts are open rolling grass plains, where graze the cattle, sheep, goats and camels which are the main source of wealth of the nomadic Somali tribes.

"Ant skyscrapers"—mounds as much as 25 feet high, built by white ants—are to be found every 100 yards or so in some localities.

South of the Haud region, and the first area that a northward-bound army would cross after leaving the Italian Somaliland border, is a barren plain of limestone, mostly open but with occasional thorn-tree jungles scattered over it. In the dry season a large part of this plateau is so parched that it is three to five days' march from one water hole to another.

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surcoat, mounted on a plunging charger. One hundred thousand spectators watched the elaborate memorial pageant.

Napoleon's Niagara Falls

Compiègne was used as German headquarters in 1870-71, and again from August 31 to September 12, 1914, during the German drive on Paris. The French made the town their general headquarters from April, 1917, to March, 1918. During the battles of the Marne and of Aisne the town was bombarded. Shellfire damaged its great château, but spared most of the public buildings.

Compiègne became endeared to the French people during the war as the birthplace of the famous French ace, Georges Guynemer, who brought down 53 enemy airplanes before his disappearance September 11, 1917.

For centuries Compiègne Forest resounded with the hunting horns of French monarchs who used it as a great royal game preserve. Later, the magnificent château in Compiègne, built in the reign of Louis XV and restored by Napoleon, was one of their favorite country residences. Here the future Louis XVI married Marie Antoinette, and Napoleon spent his honeymoon with Marie Louise.

Note: For additional references and photographs about France see "Our National War Memorials in Europe," *National Geographic Magazine*, January, 1934; "Maid of France Rides by (Joan of Arc)," November, 1932; "Land of William the Conqueror," January, 1932; "Chateau Land—France's Pageant on the Loire," October, 1930; "Armistice Day and the American Battle Fields," November, 1929; "Across the Midi in a Canoe," August, 1927; "Carnival Days on the Riviera," October, 1926; "Discovering the Oldest Statues in France," August, 1924; "Mysterious Prehistoric Monuments of Brittany" and "Through the Back Doors of France," July, 1923; and "Camargue, the Cowboy Country of Southern France," July, 1922.

Bulletin No. 1, November 11, 1935.

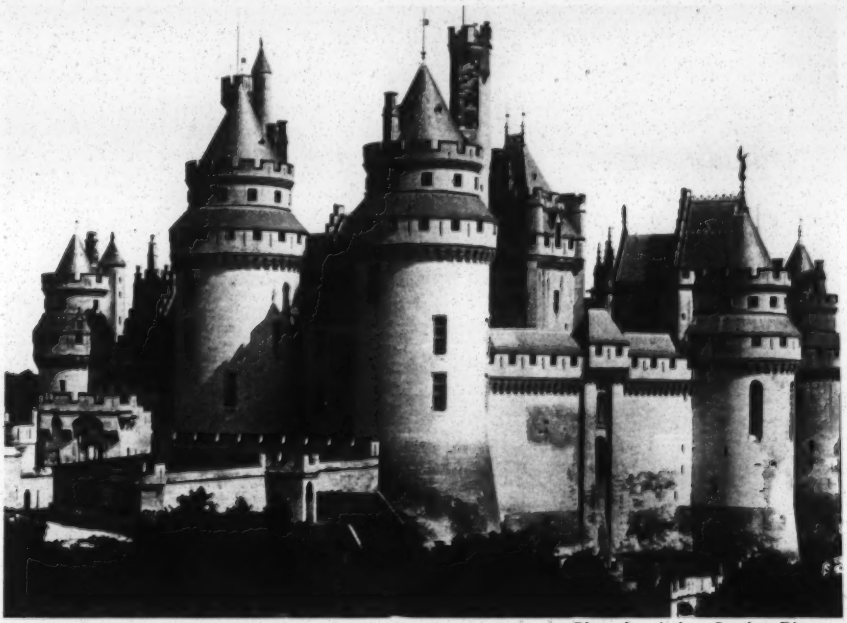

Photo by Arthur Stanley Riggs

WELCOME TO CHATEAU PIERREFONDS!

It was not always so easy to enter this feudal castle at the southeast boundary of the Forest of Compiègne, begun in 1390 when homes had to furnish protection against greater dangers than the weather. It is barricaded by forest as well as walls. Napoleon Bonaparte once "captured" it during the French Revolution by a real estate deal.

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Quincy, Cradle of Revolutionary Statesmen

QUINCY, MASSACHUSETTS, recently recalled its heritage as the birthplace of John Adams, second President of the United States, by observing the 200th anniversary of his birth.

Patriotic Americans look upon Quincy as one of the cradles of American independence. It is the birthplace not only of John Adams, but of John Quincy Adams, sixth President of the United States, and of John Hancock, bold signer of the Declaration of Independence.

Myles Standish Explored Its Site

This sober city had a beginning like a comic opera. Records of the white man's contact begin in 1621 when Captain Myles Standish and his Plymouth Pilgrims landed near its site in quest of an Indian chief.

Four years later a trading post was established there by Captain Wollaston and thirty followers, and appropriately named Mt. Wollaston. When the captain moved to Virginia, Thomas Morton, a royalist still fond of English revelry, became the dominant spirit of the settlement and changed its name to Merry Mount. Neighbors were frequently complaining to the authorities of Plymouth Colony that his sale of liquor to indentured servants and of firearms to Indians endangered both work and lives. Finally on May Day, 1627, Morton encouraged some scapegrace colonists to set up a tall Maypole, crowned with buck's horns, and to revel around it, dancing and drinking. It was then that Myles Standish and his Pilgrim followers seized Morton to be held for deportation, burned his house, and annexed his lands.

About 1634 a second settlement was made, which attracted farmers from England and Boston. In 1792 a section containing approximately 1,000 inhabitants was set aside from what is now Braintree and incorporated as Quincy.

Exciting Days Preceded Present Growth

Quincy knew exciting times during the Revolution. In many homes, pewter spoons were melted down and molded into bullets, which were pressed into the palms of passing minutemen. It was then that the old Adams Mansion was confiscated from its Tory owner, the home bought later by John Adams. Four generations of the Adams family lived in this house, which is now a national shrine. Here John Adams and his wife Abigail retired in their later years. He might frequently be seen in the fields supervising the haymaking, while she would be found at dawn busy at her dairying.

A stone cairn on Penn's Hill indicates where Abigail Adams stood with her small son, John Quincy Adams, on June 17, 1775, to watch the battle of Bunker Hill. Over the road between Quincy and Boston this nine-year-old lad used to gallop alone with letters to and from his father during the anxious days of the Revolution.

To-day Quincy is a prosperous industrial city with a population of more than 70,000. It stretches from Quincy Bay across a fertile plain and up into the Blue Hills. It is separated from Weymouth by the Fore River on the south and by the Neponset River from Boston, eight miles to the north.

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Tribes of the Fafan valley cultivate the fertile soil near the river, but in the rainy season sudden floods roar down its reaches and the tribesmen must take to the nearby hills with their herds until the water returns to its normal level.

North and east of the Webbe Shibeli, and in the path of the Italian advance toward Harar and Diredawa, are still other broad limestone plateaus and low ranges of hills. Thorn jungles and high grass cover the level country, interspersed with sandy plains, and here, too, the only water in the dry season is in wells as much as 40 or 50 miles apart. Streams have cut vast gorges as much as 1,000 feet deep.

Farther up through Ogaden, nearing Harar, the Italians may enter the Harar highlands, from which lofty peaks rise 8,000 and 10,000 feet above the sea. On the high plateaus there is good pasture land and fertile soil intensively cultivated.

Note: Students preparing projects on Ethiopia should consult "Traveling in the Highlands of Ethiopia," *National Geographic Magazine*, September, 1935; "Life's Tenor in Ethiopia," June, 1935; "Modern Ethiopia" and "Coronation Days in Addis Ababa," June, 1931; "Nature and Man in Ethiopia," August, 1928; and "A Caravan Journey Through Abyssinia (Ethiopia)," June, 1925.

See also in the GEOGRAPHIC NEWS BULLETINS: "Wanted—An Ethiopian-Italian Somaliland Boundary Line," week of March 18, 1935; and "Is It Ethiopia or Abyssinia?" also "Addis Ababa, Modern Capital of an Ancient Empire," week of October 7, 1935.

Bulletin No. 2, November 11, 1935.

Photograph by Alfred M. Bailey

FORDING OGADEN'S PRINCIPAL RIVER

The Webbe Shibeli flows down to the sea, then doesn't go near the water! A few miles north of the Equator, it disappears in dry land, after cutting this great gorge through Ethiopia on its swift way down to the coast. Men must swim burdens across when the water is too deep for mules.

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A Railroad That Religion Built—The Hejaz Railway

THE railroad that begins in a desert, runs through a desert, and ends in a desert, carries no freight, and has no potential passengers except pilgrims to Mecca, may soon be running again.

Three nations are fostering a back-to-the-rails movement for the Hejaz Railway; England and France have sent technicians to confer with Saudi Arabia about repairing the railway, dismantled during the World War and since then virtually abandoned. The question of ownership of the line, with French branches, its origin in the British protectorate, Trans-Jordan, and most of its 820 miles of track in Saudi Arabia, has not been settled.

Originally Planned as an Iron Highway to Mecca

In 1908 glistening black "Abdul Hamid," puffing and blowing smoke, with its whistle screaming to an empty desert, pulled its first string of coaches from Damascus, after three sheep had been sacrified by high priests in front of its "camel catcher," and at Medina deposited robed sheiks from the desert and fezzed, besworded, gilt-braided Turks on their way to Mecca. Thus modernity came to Mohammed.

The Sultan of the Ottoman Empire had ordered the railroad, and faithful Moslems from all over the world had sent contributions to foot the bill. The Sultan supplemented their gifts with proceeds from a special stamp tax. Then it was completed by the combined efforts of much of Christendom. Designed by a German engineer, it was built by Italian, Polish, Hungarian, and Turkish engineers, using Greek, Italian, Turkish, and Montenegrin labor. The cars were manufactured in Belgium, while "Abdul Hamid" and the other engines that whirled them through desolation were German. Some of its rails were made in America, some in France, some in Belgium. To match the French lines with which it connected, the track was narrow-gauge (three and a half feet wide). The construction work included such difficult engineering projects as rock cuttings, tunnels, and numerous bridges, as well as solid masonry buildings for the stations.

Track Runs Through Uninhabited Wastes

Starting from Damascus, the Hejaz Railway ran at first through rich grain country, but soon the strips of plowed land beside it dwindled to nothing, and it plunged into a barren area of continuous deep sand on the east, and hard, dusty, undulating plains of volcanic origin sloping down to the west. Although forbidding, the country still had a claim to beauty, for lovely mirages haunted the sands, and limestone hills acquired tones of yellow, red, purple, and even black in the burning sun. Sometimes an antelope or ostrich might appear in the desert, or occasionally lemon trees and date palms shaded a rare water hole. Once every two or three years a rainfall would bring a tinge of green to the landscape, but summer drought left the baked earth cracked a yard deep and two or three inches wide.

From the *Kadem*, or "noble starting place," to the substantial, bullet-proof depot buildings of Medina, few settlements existed near the Hejaz Railway, so stations had to be built for each—a cluster of mud houses, a few gardens walled against the sand not far from the primitive stone water cisterns, a repair shop, and perhaps a tiny hospital. Many of these small posts had to be supplied with water from the train. A stretch of 250 miles without a vestige of human habitation was not unusual.

Fierce bands of Bedouins, acknowledging no law above their own needs and desires, augmented the danger of this desolate region of Hejaz. The Ottoman government paid each tribe an annual subsidy to protect an assigned portion of the railroad, and many of the small, poorer bands, having few camels, depended to a large extent on that subsidy for a livelihood. But their connection with pilgrim traffic was much less respectable than "protection" would imply, for they robbed caravans, killed stragglers, and extorted money at every opportunity. They even tore up sections of the railroad track and plundered travelers.

Hejaz Depended on Annual Pilgrimage

But the Hejaz Railway continued to fulfill its purpose—to transport Moslems on the *Hadj*, or annual holy pilgrimage to Mecca, the birthplace of the Prophet, and to his tomb in Medina. Planning to reach their destination during the first ten days of the last month of the Moslem lunar calendar, nearly half a million poured into the area—by boat to Mecca's port, Jidda, by

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One of the greatest shipbuilding plants in northeastern United States is in Quincy on the Fore River. Many cruisers, dreadnaughts, battleships, and submarines for the navies of the United States, Japan, and England have been constructed there. To-day the launching of steel ships is still common. Even in the eighteenth century Quincy built ships, notably the *Massachusetts,* in 1789, destined for the China trade and armed with 35 guns; for many years it was one of the largest vessels afloat.

In Quincy in 1846 was organized the first school to operate on the one-class-to-a-room basis, with about 400 pupils. Two years later the community had the first real schoolhouse built specifically to be a grammar school.

The famous Quincy granite quarries, which were opened in 1825 to supply stone for the Bunker Hill Monument, today make the area the third most important production center of monumental granite in the United States.

The first railroad in the United States was constructed to carry the Bunker Hill Monument materials from the quarries to the docks on the Neponset River three miles away, beginning on October 7, 1826. Really more a tramway than a modern railroad, it was operated by horses which pulled eight-wheeled carts over iron-protected wooden rails laid on granite ties.

Note: For additional material about Massachusetts see "Flags of the World," *National Geographic Magazine,* September, 1934; "Coasting Through the Bay State" and "Sauntering Through the Land of Roger Williams," color inserts, September, 1931; "The Non-Stop Flight across America," July, 1924; "Massachusetts and Its Position in the Life of the Nation," April, 1923; "Origin of American State Names," August, 1920; "Massachusetts—Beehive of Business," March, 1920; "Winter Rambles in Thoreau's Country," February, 1920.

Bulletin No. 3, November 11, 1935.

Official Photograph, U. S. Army Air Service

LOOKING DOWN ON A CITY THAT EVERYONE LOOKS UP TO

Quincy includes several villages in the sixteen square miles within its corporate limits. The stone temple (in center of picture), built of Quincy granite from property which John Adams deeded to the town, contains the Adams presidential pew and the Adams burial crypt. Quincy has figured in literature in Hawthorne's "May-pole of Merry Mount," and also in "The Education of Henry Adams."

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November May Bring Farewell Tours of Shooting Stars

THE earth in its orbit will soon go catapulting through a region in space where it has formerly encountered those spectacular inhabitants of the heavens, the flocks of flying stones called meteors. The end of each 33-year period, approximately, since 1799 has brought a meteor shower with enough regularity to make the nights of the middle of November a period to be regarded with some anticipation.

In 1799 the November meteors are reported to have been at any one instant as numerous as the stars, skyrocketing across the heavens with the brilliance of fireworks. In 1833 the flashes of their momentary light "were so bright as to awaken people in their beds," as meteors descended "like a snow fall to the earth." One of them was described as being as large as the moon. In 1866 observers in England counted 8,000 in a single night, and the next two years brought brilliant showers to November skies in America. The display in 1899 was less spectacular, and that of 1932 a distinct disappointment.

Earth May Be Graveyard for Broken-Down Comets

Meteors, those non-luminous chunks of metal and stone, swirl through sub-zero night between the stars at an approximate pace of 26 miles per second. Some of them may be as small as a walnut or a pea, and others nearly as large as tiny asteroids, or baby planets. If they venture close enough to respond to the earth's attraction, or gravity, they are pulled into the atmosphere, and friction of their earthward fall generates enough heat to burn them up completely. It is only during this brief final flash that they are visible.

Most meteors are reduced entirely to vapor many miles above the surface of the earth. On an average, they appear when still 100 to 68 miles away, flame swiftly down, and disappear while still about 54 miles up. Some of them leave shimmering trains of vapor which last for a second or more. This is the fate of countless meteors, putting an end to their invisible career in the mysterious spaces beyond the solar system. It has been suggested that they once led a wild and brilliant life as part of a comet or a now disintegrated star, and retired to the earth simply to die of old age.

These natural November skyrockets are called the Leonids, because they burst into view near the constellation Leo, distinguished by a sickle-like pattern of stars rising now around midnight. They have been traced through old Chinese, Arabic, and European annals back as far as 585 A. D.

Will "Stones from Heaven" Fall This Year?

Astronomers have hoped for a dazzling return of the Leonid shower on some November night during the period 1932-35. Every year the earth crosses the meteors' path and collects a few shooting stars, but at one-third-of-a-century intervals it encounters the principal swarm. This main part of the meteoric parade is so long that when men on earth make their annual trip through its orbit, for three successive years they find it still blazing by. Moreover, the parade is so wide that the earth may have to spend nearly three days passing through on each crossing. Thereafter as they cross its line of march for the next thirty years or so, they see relatively only a few stragglers following in

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camel caravan, and by rail as far as Medina, 200 miles from Mecca. Hejaz, able to export only a few dates, was dependent on the pilgrims' needs for its commerce, and was enormously indebted to the railroad for facilitating travel.

The World War, therefore, brought economic as well as physical destruction to the region when the late Colonel T. E. Lawrence (Lawrence of Arabia) undermined the Ottoman power in Arabia by leading his insurgent Arabs in guerilla attacks on the Hejaz Railway. "Our idea," he wrote, "was to keep the railway just working, but only just, with the maximum of loss and discomfort." With high explosives he picked holes in the line, here dynamiting a bridge, there digging up the rails. To avoid giving the natives a dangerous knowledge of explosives, he did much of this himself. Only the northern portion was spared. When the Hejaz Railway was entirely out of commission, Turkish power in Arabia gave way to British rule, and destruction of the railroad brought depression to Hejaz.

Since then, forceful King Ibn Saud has united the lawless desert tribes into the first strong centrally controlled government the peninsula has known for centuries—Saudi Arabia. Motor buses, typewriters, radio tubes, telegraph equipment—all are pouring into the country to carry out his plan of modernization. In 1926 automobiles were almost unknown there; by January 1, 1930, 1,500 had been imported, 250 of which were for a royal motor transport. As a vital step in progress Mohammedans of many races—Persians, Egyptians, Turks, Syrians, Moroccans, Algerians, Iraqi, Javanese, Tunisians—have petitioned him to reconstruct the Hejaz Railway.

Note: See also "An Unbeliever Joins the Hadj," *National Geographic Magazine,* June, 1934; "A Visit to Three Arab Kingdoms," May, 1923; "The Rise of the New Arab Nation," November, 1919; and "Mecca the Mystic," August, 1917.

Bulletin, No. 4, November 11, 1935.

Photograph by Owen Tweedy

PRIVATE CARS ON THE CAMEL EXPRESS

More rigidly orthodox Mohammedans seem to scorn bus or railway transportation to Mecca. An occasional solitary pilgrim rides a camel under an umbrella, but most of them travel in these uncomfortable palanquins, which serve as passenger and baggage cars for a whole family. Climbing in by a ladder, the passenger is in danger of being bitten by the camel.

the wake. A shower may bring 900 shooting stars in 45 minutes, as one observer reported, but a non-shower year will probably reward the watcher with no more than 6 in an hour.

One astronomer has warned that the earth may have lost touch with the densest part of the Leonids. Indeed, the path of this heavenly torchlight procession is subject to being re-routed without notice by the changing positions of the planets, so that it is difficult to predict with certainty the number of meteors each middle of November may bring. For 1935, however, the period of their greatest frequency will be watched for on November 15, 16, and 17, between midnight and dawn. If they fail to appear in large numbers, they will corroborate the theory that Jupiter has been exerting his gravitational charms, luring the meteors away from the earth to travel closer to him.

Some of these "heaven-stones" are so large that their passage through the atmosphere does not consume them entirely, and the blackened core strikes the earth. Then they are no longer called meteors, but meteorites. Meteor Crater in Arizona is thought to be the scar made where a tremendous prehistoric meteorite buried itself in the desert. More than a thousand falls of smaller meteorites, weighing from a few pounds to a few tons, have been reported. In ancient times they were venerated as objects of divine origin, notably the "black stone" of the Kaaba in the Mosque at Mecca. The gigantic Cape York meteorite, which the late Admiral Peary brought back from Greenland in spite of its 36½ tons, was one of three from some of which the practical Eskimos had been chipping iron for their weapons.

The Byrd expeditions in the Antarctic have learned that the earth is constantly being pelted with "star dust" at a higher rate than had previously been supposed.

Note: Additional meteorological photographs and references can be found in the following: "Exploring the Ice Age in Antarctica," *National Geographic Magazine*, October, 1935; "Observing a Total Eclipse of the Sun" and "Photographing the Eclipse of 1932 from the Air," November, 1932; "Conquest of Antarctica by Air," August, 1930; "Interviewing the Stars," January, 1925; and "Exploring the Glories of the Firmament," August, 1919.

Bulletin No. 5, November 11, 1935.

Photograph from Mt. Wilson Observatory

SWAN SONG OF A SHOOTING STAR

After a mysterious career through unthinkable vastnesses of space and time, this meteor has become entangled in the earth's atmosphere and is blazing a path to extinction. Its irregular shape makes it "wobble" as it hurtles along in a spiral. Meteors are ordinarily visible for only the last one-third or one-half of a second of their existence.